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Adverbial clauses and speaker and interlocutor gender in Shakespeare's plays

Theresa McGarry[1] and Kelsey Kiser[1]

ABSTRACT This study draws on previous findings regarding adverbial clauses in relation to speaker and interlocutor gender in a corpus of current actual speaker data. Our aim is to examine those same relations in a corpus of Shakespeare's comedies and histories. Mondorf (2004) investigated four types of adverbial clauses in a corpus of modern speech and found that the women used more causal, conditional and purpose clauses than the men, while the men used more concessive clauses. Mondorf's explanation for this difference is that women use the three clause types that mitigate the speaker's commitment to the truth of the proposition, while men tend to use more concessives, which strengthen the commitment. She also found that in mixed-gender conversations these trends were generally intensified. However, other analyses have indicated that these patterns do not hold across contexts. Much more research is called for to understand the localized relations among adverbial clause usage, speaker gender and context in particular settings. One question to pursue is whether we can see gendered patterns of adverbial usage in historical varieties of English. Accordingly, in this study we analyse dialogue in Shakespeare's plays to ascertain whether Mondorf's findings can be extrapolated to the language of these fictional speakers. The results indicate that Shakespeare generally does not use the adverbial clauses to portray the gender of the characters in ways similar to those of actual, modern speakers. Only small differences are found, regarding purpose clauses in the histories and conditional clauses in the comedies. The analysis indicates that female and male characters speak very similarly with regard to syntax, and adverbial clauses contribute to the construction of characters in very localized contexts.

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Introduction

This article addresses the frequency of four types of finite adverbial clauses in the language of the characters in Shakespeare's comedies and histories. Given previous findings that the frequencies of such clauses in British English differs according to the gender of the speaker and the listeners, our purpose is to investigate whether similar differences appear in Shakespeare's scripted speech for male and female characters and whether the functions of the clauses also appear to be similar when comparing fictional characters' speech with attested speech of modern speakers in naturally occurring interaction. By returning to British English, but that of an earlier time, we aim to both further the understanding of this pattern in English and provide a new perspective on how Shakespeare uses syntax to construct characters. The main questions we address in this study are the following:

- How is adverbial clause usage affected by gender of speaker in Shakespeare?
- Does the gender composition of the interlocutor group also affect usage?

In comparing our results here to findings of earlier studies, we intend to shed light on whether Shakespeare employs adverbial clauses to construct character gender in ways and for means similar to those found in the speech of twentieth-century British English speakers. Thus, we aim to contribute to discussions on the relation of adverbial clauses to gender over time and on the construction of gender in Shakespeare's plays. Fundamental to these discussions are multi-faceted empirical descriptions of the occurrences of adverbial clauses such as the one we posit here.

The findings indicate that two kinds of adverbial clause, the purpose clause and the conditional clause, do appear to be used somewhat disproportionately in relation to speaker gender in the histories. We suggest that this usage is related to contemporaneous public conceptions of gender and power. However, the overall picture is strong similarity in the usages of women and men, suggesting that the reported gender-asymmetric patterns are relatively recent and/or that adverbial clauses are not an important feature in the playwright's construction of gendered characters.

Previous research

Linguistic analysis of dramatic dialogue. The question of how and to what extent the scripted speech of characters in drama resembles the speech of actual humans is complex. It is also important, because by pursuing it we stand to advance the understanding of both literature and linguistics. On the one hand, there are obvious differences between the two, such as comparatively fewer false starts, hesitations and speech errors in scripted speech. On the other hand, as discussed by researchers such as Gross (2000) and Mahlberg (2013), the writer's success in creating believable characters means the characters must, at least in some ways, talk like real people. Tannen and Lakoff (1979: 581), suggest that scripted speech "may represent an internalized model or schema for the production of conversation," reflecting what the writers know about how people talk. Moreover, the writer's design of speech for each character is clearly essential to portraying the characters as specific kinds of people, with specific social and psychological backgrounds, personalities, goals, interests, and so on. Therefore, we can also hypothesize that the ways of speaking will vary among characters, with some similarity to the way they vary among actual people. For example, we might predict that teenaged characters will generally use more slang than middle-aged characters.

However, we should expect to find limits to the similarities in variation among real people and literary characters. Given the constraints and special purposes involved in any writer's work, linguistic features will be chosen under different circumstances and for different reasons than figure in the interaction of actual speakers. Ultimately, when analysing the dialogue of literary characters, we are not comparing the speech of the characters to that of people. Rather, we are comparing the writer's constructed dialogue to natural speech and sometimes, as in this study, the constructed dialogue of some characters to other characters. (For an interesting analysis of how readers gender fictional characters, including the premise that characters are constructed in analogy to actual humans, see Gymnich, 2010.)

The levels at which linguistic variation will take place and the specific features where it will be instantiated in literature are empirical questions. On the very choice of language or dialect, Gross (2000) examines the use of code-switching, that is, mixing two languages, in the speech of characters bilingual in English and Spanish. Tannen and Lakoff focus on how the characters use strategies such as sarcasm and pontification to effect metastrategies such as distancing. Maillet (1999) finds that the differential use of determinative language and visionary language, that is, expressing ideas that are then realized in actual events compared with expressing images that are anticipatory and uncertain, is key in the portrayal of the gender of the characters in *Clytemnestra* and *Macbeth*. These analyses hint at the wide range of investigations of character speech possible on the semantic and pragmatic levels. Questions relating to lexicon, morphology and syntax also suggest themselves, often related to claims about clines of speech style, such as "informational" versus. "involved" styles. Pennebaker (2013), for example, examines the frequencies of a list of discrete features such as pronouns and articles, as well as categorized lexical items, such as "social words," in the speech of Shakespeare's characters.

The current state of knowledge on the linguistic structure of dramatic dialogue invites investigation of virtually any pattern found in naturally occurring conversation. Biber and Burgess (2000) make a case for using electronic corpora to help illuminate continuing debate on the ways in which speakers enact gender with speech across contexts. Further, they demonstrate the use of the ARCHER corpus of historical English, which includes both natural and scripted speech to investigate possible changes in the speech of women and men over time and convincingly show both the value of triangulating findings from both areas and the importance of considering the gender of the addressee, the gender composition of the interlocutor group, and also the gender of the writer. The corpus of Shakespearean plays is a potentially rich data source because it comprises numerous plays in three subgenres that have demonstrated enduring appeal.

Our own analysis focuses on a linguistic feature previously found to be related to speaker gender: adverbial clauses. After discussing previous findings on gender in Shakespeare's plays in the next section, we explain our choice of this feature in the subsequent section.

Gendered speech in Shakespeare. Several researchers have compared the speech of Shakespeare's male and female characters by means of automated text analysis. Pennebaker (2013), mentioned above, interprets his results on the frequencies of discrete features and categorized lexical items as indicating that Shakespeare "fails at getting inside the minds of women" (56), in that both his male and female characters use language characteristic of male speakers. Although details of the methodology are lacking, and the analysis considers only the gender of the speaker, not the

interlocutor, the analysis helps provide an interesting point of departure.

Somewhat different conclusions are drawn by Hota *et al.* (2006) and Olson (2013), who analyse Shakespeare plays using text classification and machine learning to identify the words and kinds of words used disproportionately by characters of one gender. For example, both studies find that the male characters use more determiners and the female characters use more pronouns, which is consistent with arguments made by researchers such as Argamon *et al.* (2003), drawing on the informational-involvement style cline described by Biber (1995), that women use more features consistent with the involvement style and men use more features consistent with the informational style. Concerning specific words, Olson finds the word "willow" to be the most indicative of female gender of a speaker and the word "sore" to be the most indicative of male gender; Hota *et al.* find the interjection *prithee* and the verbs *pour, pray* and *praise* to indicate female gender, while the verbs *avoid, fight* and *wrought* indicate the speaker is male. Interestingly, Hota *et al.* find the gender differences to be stronger in Shakespeare's later works, and Olson finds the gender more marked in tragedies than in other genres.

Gender and adverbial clauses. In the considerable body of research on language and gender that has been developing since the 1970s, syntax is a relatively understudied area. An extensive study that attempts to address this gap is Mondorf (2004). Mondorf reports an investigation of the London Lund Corpus (LLC), a collection of naturally occurring British English, containing 100 spoken texts of 5000 words each. She focuses on four types of adverbial clauses. Table 1 shows each type and some of the expressions that commonly begin them; the taxonomy is explained more fully in the section on methodology.

In the LLC, women used significantly more adverbial clauses than men when the four clause types were aggregated. When the types were looked at separately, the women used more causal and purpose clauses than the men. When considering clause position, the women also used more conditionals when they were postposed to the main clause, while the men used more concessive clauses in that position (Mondorf's analysis also showed sensitivity to position, in that adverbial clauses coming after the main clause, rather than before, were particularly preferred by women. In the data in the present study, this is generally not true, but we leave this point aside for future analyses). Mondorf's explanation for this difference is that women use the three clause types that mitigate the speaker's commitment to the truth of the proposition and thus perform femininity by referencing tentativeness, while men tend to use the type that strengthens the commitment and thus perform masculinity by referencing certainty.

The use of the clauses is also related to the gender composition of the group. Previous research in the social psychological framework (for example, Hogg, 1985; Mulac *et al.*, 1988; Takano, 1998) had found that many features linked to the performance of gender tended to occur more frequently in same-sex interaction than in mixed-sex interaction. That is, speakers tend to match their speech to that of their conversational partners by using the gender-linked features more frequently with interlocutors of the same sex and less frequently with interlocutors of the opposite sex. However, the opposite pattern has also been observed, where speakers in mixed-sex conversation heighten certain differences. That is, the women use features linked to the performance of femininity more in the mixed-gender context than in the single-gender context, and/or the men in the mixed context increase their use more of the features linked to masculinity, compared with all-male speech. (For discussion, see Weatherall and Gallois (2003)).

Table 1 | Four types of adverbial clauses

Causal	Because, since, in that, as long as, inasmuch as, in case
Conditional	If, in case, so long as, assuming
Purpose	So, so that, in order that, lest
Concessive	Though, although, even though, even if

In the LLC, Mondorf found that adverbial clause usage differences between all-female and all-male speech generally appeared more strongly when she compared the women's and men's speech in the mixed-gender context. This was true with regard to causal, purpose and concessive clauses. Her analysis indicated that both sexes participated in this divergence; that is, the men increased their use of concessive clauses and reduced their use of causal and purpose clauses, and the women decreased their use of concessive clauses and increased their use of causal and purpose clauses.

Further investigations using the same taxonomy of clauses suggested that the patterns found in the large-scale LLC may not appear consistently across contexts. Speakers use the clauses to enact gender in locally situated ways as they pursue locally constructed goals. McGarry and Lee (2012) analysed the speech of participants in all-female and mixed-gender business meetings of an outdoor sports club in the Midwestern U. S. and found that, as in Mondorf (2004), women used more causal and purpose clauses. Their primary use seemed to be justifying positions the speakers took in discussions in which the activities and policies of the club had to be decided. A possible interpretation concerns the nature of the organization. It had been started as a men's organization, and the men's club was still central, having the final authority on organizational matters, while the women formed an auxiliary club. Thus, it seems likely that their greater use of causal and purpose clauses reflected their greater need to justify their ideas and opinions. This interpretation accords with the findings that the men tended to use more concessive clauses, though this difference was not statistically significant, and that these differences were greater in the mixed-gender meetings, where the men's and women's boards met together, than in the women's auxiliary club meetings. However, contrary to Mondorf's findings, the men used more conditional clauses than the women. The researchers found the reasons for this difference to be unclear and possibly related to a difference between British and American English.

The patterns also do not appear to hold across languages. Mwinyelle and McGarry (2017 [Forthcoming]) examined the speech of Spanish speakers in single-gender and mixed-gender dyads in an experimental setting with the topic controlled and found very clear differences from the previous findings on English. Comparing male dyads with female dyads, no differences in the frequencies of the clauses were found. In the mixed-gender dyads, the speech of the women and the men also exhibited very similar proportions of the clauses. However, when single-gender and mixed-gender speech were compared, a difference did appear: the women and men both increased their frequency of conditional clauses, suggesting that this type of clause may be important in mixed-gender interaction but without indexing either femininity or masculinity. The idea that certain types of clauses may be selected as sites of accommodation among genders calls for further research. Surprisingly, McGarry and Mwinyelle (2016) analysed a corpus of 95 naturally occurring conversations in French and found no correlation among gender of speakers or of interlocutor group with frequency of any of the four types of clauses.

Data and methodology

To obtain a sample with significant representation from two different genres,[1] we chose the following plays for analysis (Table 2). In future work, we plan to add tragedies to the corpus.

The versions of the scripts used for analysis are those found at http://shakespeare.mit.edu/. A comparison of a selection of occurrences of all four types of adverbial clauses in these versions with the corresponding lines in the First Folio version (Shakespeare and Hinman, 1968) indicated no differences in the syntax of these clauses.

We had two specific hypotheses:

1. On the basis of the findings of Mondorf (2004), we hypothesize that the frequencies of the four types of finite adverbial clauses will differ in the speech of women compared with that of men.
2. The frequencies will also differ in single-gender groups compared with mixed-gender groups.

In operationally defining the four types of clauses at issue, we follow Mondorf (2004), who defines a "finite adverbial clause" as one meeting three criteria:

A finite adverbial clause is one that

1. Is introduced by a subordinating conjunction[2]
2. Includes a subject and a finite verb
3. Is not a complement in a larger clause

The last criterion excludes cases such as those seen in Example (1).

(1) I wonder **if Titania be awaked** (*A Midsummer Night's Dream*, 3.2)

This clause is excluded because *if Titania be awaked* is the complement of *wonder*. While Mondorf states this condition as "not a subject or object in a larger clause," we use the broader term "complement" so that the distinction also rules out predicate complements, which are not adverbial.

The first criterion, on the other hand, is adopted as a matter of methodological convenience, even though it does exclude some valid adverbial clauses, effected with inversion and either subjunctive verb or auxiliary periphrasis (see Blake, 2001: 242–243 and Rissanen, 2011: 308). Example (2) shows a concessive clause of this type.

(2) **Be what it is,**
The action of my life is like it, which I'll keep, if but for sympathy. (*Cymbeline* 5, 4)

Rissanen (2011: 308–309) explains that in Early Modern English (EME) the range of verbs that could be used in this structure was wider than in present-day English. However, for convenience of analysis we ignored these kinds of adverbials in the current study.

Table 2 | Plays analysed

Comedies	*Histories*
All's Well that Ends Well	Henry IV Part 1
As You Like It	Henry IV Part 2
Comedy of Errors	Henry V
Measure for Measure	Henry VI Part 1
Merry Wives of Windsor	Henry VI Part 2
Midsummer Night's Dream	Henry VI Part 3
Much Ado About Nothing	Henry VIII
The Taming of the Shrew	King John
	Richard II
	Richard III

The classification of the clauses as causal, conditional, purpose or concessive is based on meaning, rather than an overly simple taxonomy of initial expressions. For example, compare the use of *if* in these two utterances:

(3) **If you will go**, I will stuff your purses full of crowns. (*Henry IV Part 1*, 2.2)

(4) **If reasons were as plentiful as blackberries**, I would give no man a reason upon compulsion, I. (*Henry IV Part 1*, 2.4)

As Rissanen (2011: 308) discusses, *if*, prototypically used for conditional clauses, can also be used in EME for concessive clauses. In Example (3), the adverbial clause introduces a condition on the speaker's stuffing the purses full of crowns. The clause is, therefore, classified as a conditional. In Example (4), the meaning of *if* is the same as *even if*, and strengthens Falstaff's refusal to give reasons under compulsion rather than qualifying it. The clause is, therefore, classified as concessive.

Adverbial clauses in EME showed the results of a long trajectory over Old English and Middle English from widespread use of parataxis and weak boundaries between parataxis and hypotaxis to development of a much clearer distinction between coordination and subordination (Nist 1966; Rissanen 2011, among others). In the interests of brevity, we omit a detailed comparison of adverbial clause structure in EME and present-day English; for grammatical descriptions, see Rissanen (1999) and Blake (2001). In the four sections that follow, we summarize particularly relevant sections of their explications.

Causal clauses. A common subordinator to head a causal clause is *because*. Other subordinators also occur.

(5) **Because you talk of wooing**, I will sing. (*Much Ado About Nothing*, 2, 3)

(6) [they] envy your great deservings and good name, **Because you are not of our quality**. (*Henry IV Part 1*, 4, 3)

(7) The other part reserved I by consent, For that my sovereign liege was in my debt, Upon remainder of a dear account, **Since last I went to France to fetch his queen**: (*Richard II*, 1, 1)

Some causal subordinators occurring in the data have disappeared or become very infrequent in present-day English. Blake (2001: 173) mentions *for that* as a causal subordinator in EME. Rissanen (1999; 305–6) goes further in indicating that *for (that)* is a very frequent subordinator of EME causal clauses, when the clauses introduce new information, and *that* is frequent when the information is given. Rissanen's claim is borne out in the following examples from our data.

(8) My lord, I must confess I know this woman: And five years since there was some speech of marriage Betwixt myself and her; which was broke off, **Partly for that her promised proportions Came short of composition**, but **in chief For that her reputation was disvalued In levity**: (*Measure for Measure,* 5, 1)

(9) Good Master Vernon, I am bound to you, **That you on my behalf would pluck a flower**. (*Henry VI Part 1,* 2, 4)

Conditional clauses. Conditional clauses set conditions on the truth or import of the main clause. They typically start with *if*, as in Example (10).

(10) Give me your hands, **if we be friends**. (*A Midsummer Night's Dream*, 5, 1)

They may also start with a few other expressions such as *unless, when* or *save that*. A subordinator not found in modern English that appeared in the data with clear conditional meaning was *an*, sometimes followed by *if* and sometimes occurring alone.

(11) Heigh-ho! **an it be not four by the day**, I'll be hanged: (*Henry IV Part 1*, 2, 1)

(12) An if one should be pierced, which is the one? (*Love's Labour's Lost*, 4, 2)

Both Blake (2001: 174) and Rissanen (1999: 282) note this usage and the origin of the subordinator in the coordinating conjunction *and*. According to Rissanen, it instantiates a relic of a less clear distinction between coordination and subordination common in Middle English. In EME, he finds, it greatly lessened, and was used by dramatists as a mark of colloquial speech.

Say that while Rissanen says that *an* is a coordinator, because it can occur at the beginnings of clauses we treat it as a subordinator.

Purpose clauses. Purpose clauses help to justify the meaning or import expressed in the main clause. In Blake (2001) and Rissanen (2011) they are referred to as "final" clauses. In our data, these clauses can start with *so* or *so that*, as in modern English.

(13) in the which, my instruction shall serve to naturalize thee, so thou wilt be capable of a courtier's counsel and understand what advice shall thrust upon thee; (*All's Well That Ends Well*, 1,1)

However, as Blake and Rissanen note, they frequently they start with *lest* or *that*.

(14) Do not plunge thyself too far in anger, **lest thou hasten thy trial**; (*All's Well That Ends Well*, 2, 3)

(15) I would gladly have him see his company anatomized, that he might take a measure of his own judgments, wherein so curiously he had set this counterfeit. (*All's Well That Ends Well*, 4, 3)

Concessive clauses. Concessive clauses strengthen the proposition of the main clause. The most common subordinators starting these clauses are *though* and *although*.

(16) But, I protest, he had the chain of me, **Though most dishonestly he doth deny it**. (*Comedy of Errors*, 5, 1)

(17) Thieves are not judged but they are by to hear, **Although apparent guilt be seen in them**; (*Richard II*, 4, 1)

Other concessive clauses in the data begin with *whereas, while*, or a few other subordinators.

(18) That have by marriage made thy daughter mine, **While counterfeit supposes bleared thine eyne**. (*The Taming of the Shrew*, 5,1)

(19) **Albeit you have deserved High commendation, true applause and love**, Yet such is now the duke's condition, That he misconstrues all that you have done. (*As You Like It,* 1,2)

Correlating clause to gender. We identified each instance of the four types of clauses manually and labelled them using AtlasTI. We also classified all speech according to the gender of the speaker and the gender composition of the interlocutor group. We defined the interlocutor group as all the characters on stage when the utterance was produced. We realize that whether the group is single-gender or mixed-gender is a different aspect of context than the gender of the specific addressee(s), but we leave that issue for a future analysis.

For ease of comparison, we followed the methodology of Mondorf (2004) for the statistical analysis. Once the clauses were tallied, we compared the observed counts to the counts expected if clause usage occurred equally in both genders. The expected counts were obtained by multiplying the observed counts, relative to speaker or setting, by the proportion of words attributable to the speaker gender or setting. For example, overall the female characters produced 62,404 of the total 351,130 words in the data, or 17.77%. The total number of causal clauses produced was 182. Therefore, we would calculate the expected number of causal clauses for female speakers as 182 x 0.1777 = 32.35. We then ascertained the statistical significance of the difference between the expected and observed counts with a chi-square analysis. The

Table 3 | Gender of characters

Character gender	*Female*	*Male*
Comedies	40 (22.86%)	135 (77.14%)
Histories	40 (8.39%)	438 (91.63%)
Comedies and histories combined	80 (12.25%)	573 (87.75%)

gender of the speaking characters in the plays is shown in Table 3. The amounts of speech, measured in words, relating to speaker and interlocutor group gender, are shown in Table 3.

Clearly, the plays include more speech by males than by females (over five times more), which accords with common perception and actual statistics (see, for example, Yeung *et al.*, 2016). Moreover, the male characters produce over 70% of their speech in single-gender conversations, while the female characters produce over 80% of their speech in mixed-gender conversations, indicating that male characters predominantly converse among themselves while female characters predominantly talk to, or at least in the presence of, male characters.

Comparing the proportion of female with the proportion of speech they produce, we see that in the aggregate the figures are quite similar: 12.25% of characters are women, and they produce 17.78% of total speech. Thus, the character diversity represented in the speech of the women is about equal to that represented in the speech of the men. It continues to be equal when the genres are considered separately. In the comedies, the 22.86% of characters that are female (see Section 4.3) produce 26.70% of the speech, and in the histories the 8.39% of characters that are female produce 12.06% of the words.

Results

We consider first the results aggregated across comedies and histories. We then examine the genres separately.

Clauses by gender. Figure 1 shows the observed (0) and expected (E) numbers of occurrences of the four clauses, aggregated, when comedies and histories are combined. The observed values are very similar to the expected ones, which are based on the ratio of male characters' speech compared with female characters'. Thus, the women and male characters appear to use adverbial clauses with the same frequency. Since Mondorf found that women used significantly more, this finding indicates that the characters' use of the clauses differs from use attested in actual modern speakers.

Figure 2 shows the number of occurrences for the four types of clauses independently.

Again, the observed and expected values are very similar, and no statistically significant differences appear, so we cannot say that either female or male speakers use any of the clause types more often.

Clauses by context. We now consider the effect of the interlocutor group, that is, whether the speakers use any of the types of adverbial clauses more in single-gender or mixed-gender groups. Figure 3 compares the proportions expected and observed in each context; "SG" and "MG" stand for "single-gender" and "mixed-gender," respectively.

Again, no differences are statistically significant, despite a slight tendency for the conditionals to be more frequent in the mixed-gender context.

If we separate the results of the context by the gender of the speaker, we see that the female characters' expected and observed frequencies are very similar for the causal, conditional and concessive clauses, indicating that the female characters use the

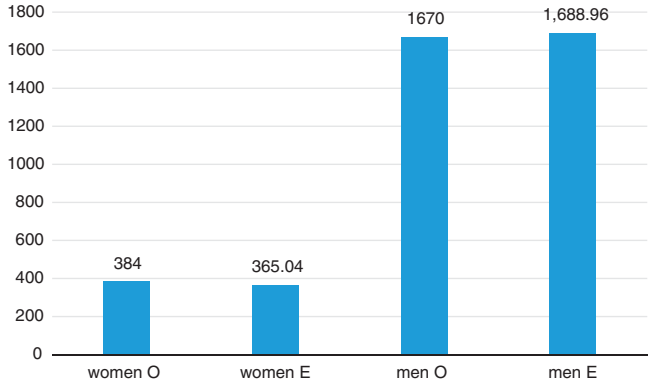

Figure 1 | Total adverbial clauses by speaker gender.

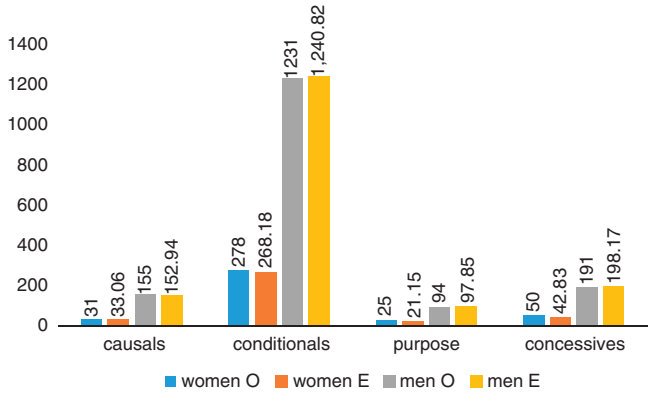

Figure 2 | Clause types and speaker gender across genres.

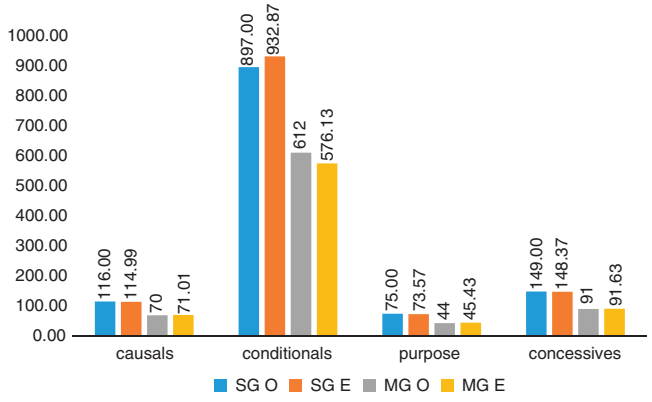

Figure 3 | Clauses by context and type.

clauses equally in the single-gender and mixed-gender groups, as shown in Fig. 4.

The purpose clauses, on the other hand, are skewed toward the mixed-gender context at a statistically significant rate ($\chi^2 = 3.889$, $P = 0.0486$), though the small total number of clauses suggests caution drawing inferences here. Of the 25 purpose clauses the female characters produce, 4.92 should occur in the all-female speech, based on the proportion of total female characters' speech that occurs there, but only one does; conversely, only 20.08 should occur in the mixed-gender speech, but 24 do. The male characters' usage of purpose clauses shows a trend in the opposite direction, as seen in Fig. 5. More purpose clauses than expected appear in the all-male speech, while fewer than expected occur in

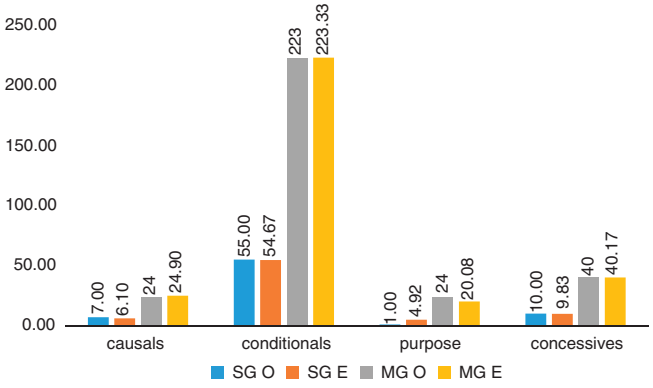

Figure 4 | Female characters' clauses by context and type.

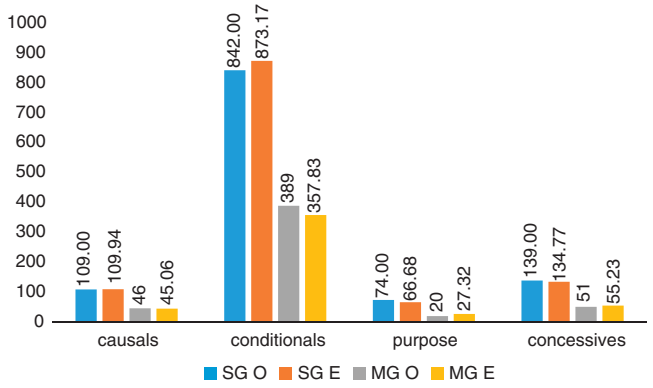

Figure 5 | Male characters' clauses by context.

the mixed-gender speech, though the result is not quite significant ($\chi^2 = 2.765$, $P = 0.0964$).

We also see that the preference for using conditionals in the mixed-gender context seen in the combined data is attributable to the male characters. While the female characters' conditional clauses distributed as expected, in the male characters' speech, a greater than expected proportion occurs in the all-male speech, though the difference is not significant ($\chi^2 = 3.828$, $P = 0.0504$).

Clauses by genre. In the comedies, the female characters produce 26.70% of the words, and the male characters produce 73.30%. Recall that the percentages for both genres combined were 17.77% for the female characters and 18.83% for the male characters (Table 4), so in the comedies the disparity is less, but still pronounced. On the other hand, we see a much larger difference regarding the context of the speech. Across the corpus, the male characters produce 70.93% of their speech in the all-male context. However, in the comedies alone, this discrepancy is smaller, as the male characters produce only 59.75% of their speech in the all-male context. For female characters, the proportion of their speech occurring in the mixed-gender context is 73.80%. This proportion is almost identical to that when both genres are combined, so we see that within and across the genres about three quarters of the female characters' speech occurs in mixed-gender interaction.

The comparison of the aggregated adverbial clauses according to the gender of the speaker is shown in Fig. 6.

The total number of clauses produced according to speaker gender is very close to the expected value based on the proportions of speech. Further, when we separate the four kinds of clauses, the male characters and the female characters appear to use each kind at the same frequencies, as shown in Fig. 7.

Table 4 | Totals and proportions of words produced according to speaker gender, context and speaker gender combined with context

	Ratio	*Percentage*
Female characters across contexts	62,404/351,130	17.78%
Male characters across contexts	288,726/351,130	82.23%
Single-gender across speakers	217,071/351,130	61.82%
Mixed-gender across speakers	134,059/351,130	38.18%
Female characters' speech produced in single-gender context	12,273/62,404	19.67%
Female characters' speech produced in mixed-gender context	50,131/62,404	80.33%
Male characters' speech produced in single-gender context	204,798/288,726	70.93%
Male characters' speech produced in mixed-gender context	83,928/288,726	29.07%
Single-gender speech produced by male characters	204,798/217,071	94.35%
Single-gender speech produced by female characters	12,273/217,071	5.65%
Mixed-gender speech produced by male characters	82,823/134,059	61.78%
Mixed-gender speech produced by female characters	51,236/134,059	38.22%

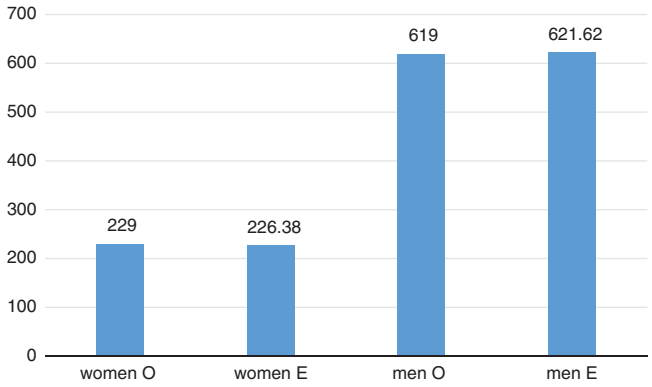

Figure 6 | Adverbial clauses by speaker gender in comedies.

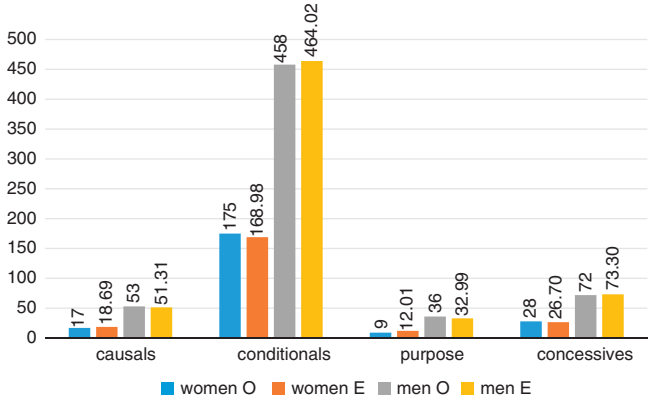

Figure 7 | Clause types and speaker gender in comedies.

Similarly, no significant effect is found for the context, though there is a tendency for the purpose clauses to appear more in the single-gender context, as shown in Fig. 8.

We now look at the contextual use by each gender. Figure 9 shows the female characters' use in single-gender and mixed-gender context.

The observed frequencies are very close to the expected ones, with no significant differences. The female characters' greater use of purpose clauses in the mixed-gender than in the single-gender context that appeared when genres were aggregated is not visible in the comedies by themselves. On the other hand, the male characters' use of purpose clauses in comedies is context-sensitive, as shown in Fig. 10.

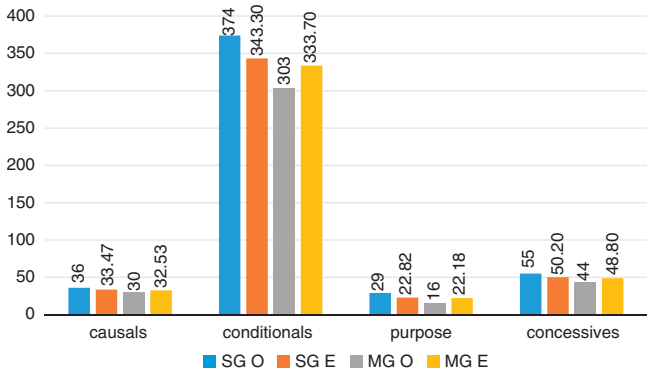

Figure 8 | Clauses by context and type in comedies.

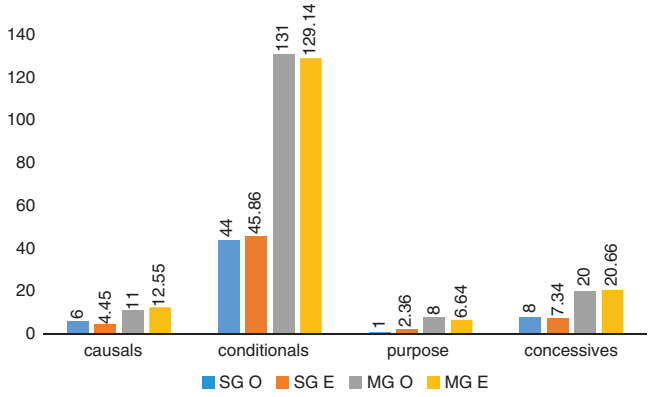

Figure 9 | Female characters' clauses by context in comedies.

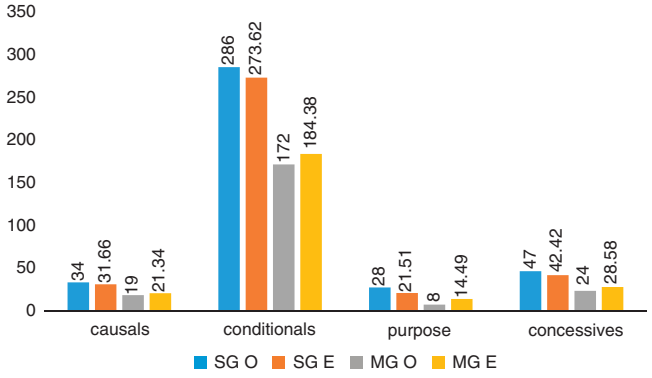

Figure 10 | Male characters' clauses by context in comedies.

Causals, conditionals and concessives occur at predicted frequencies; while male characters use conditionals slightly more in mixed-gender than single-gender interaction here, as they did when both genres were combined, again the difference is not significant. However, male characters' purpose clauses occur significantly more frequently in single-gender than in mixed-gender conversations ($\chi^2 = 4.865$, $P = 0.0274$). That is, the trend for the male characters to use purpose clauses more in all-male conversation that was observed in the aggregate data reaches statistical significance when analysed in the comedies only.

In the histories, female characters produce 12.06% of the words spoken, compared with 26.70% in the comedies. Further, only 10.48% of their speech occurs in all-female contexts. For the male characters, 77.22% of words occur in the all-male context. These figures all point to female characters characters' being even less prominent in the histories than in the comedies, in that they produce fewer words and participate in fewer conversations.

Figure 11 shows the frequencies of the clauses for each gender in the histories.

The frequencies of clauses with the types combined exhibit no significant differences. However, when we separate the clauses by type, again the purpose clauses show a significant difference, as indicated by Fig. 12.

The female characters use significantly more purpose clauses than do the male characters ($\chi^2 = 6.390$, $P = 0.0115$). When we turn to the interlocutor context, it is the conditional clauses that show a significant difference, as seen in Fig. 13.

The conditional clauses occur more frequently in the mixed-gender context ($\chi^2 = 81.48$, $P = 0.0043$). The tendency for conditional clauses to occur more in the mixed-gender interaction that was visible when the genres were combined appears to be accounted for by the histories, since no difference appears in the comedies, and significance significant difference appears in the histories. Further, when we consider both speaker gender and interlocutor group gender, we find that this result is due to the speech of the male characters. Figure 14 indicates that the female characters' use of clauses is not influenced by the genders of their interlocutors.

Figure 15, however, shows that the male characters use conditional clauses much more often in mixed-gender interaction speech than in all-male speech ($\chi^2 = 12.321$, $P = 0.0004$).

No other clause type in male characters' speech appears to be sensitive to context.

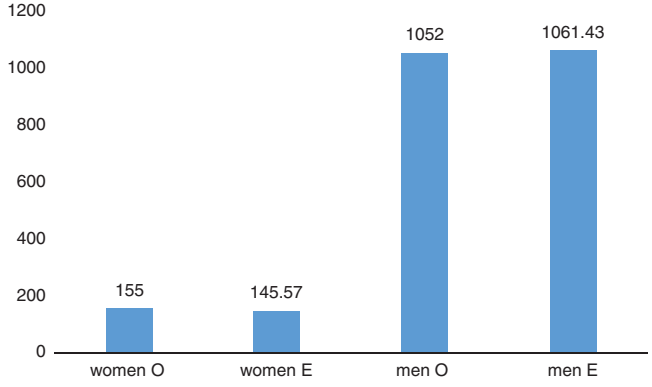

Figure 11 | Adverbial clauses by speaker gender in histories.

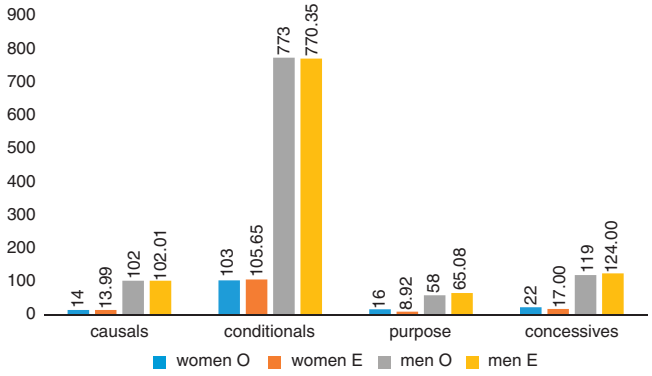

Figure 12 | Clause types and speaker gender in histories.

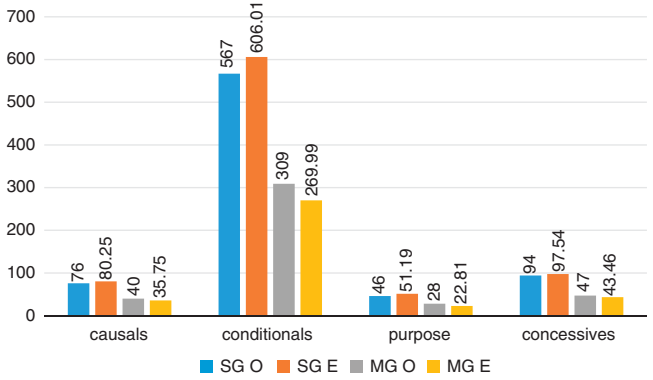

Figure 13 | Clauses by context and type in histories.

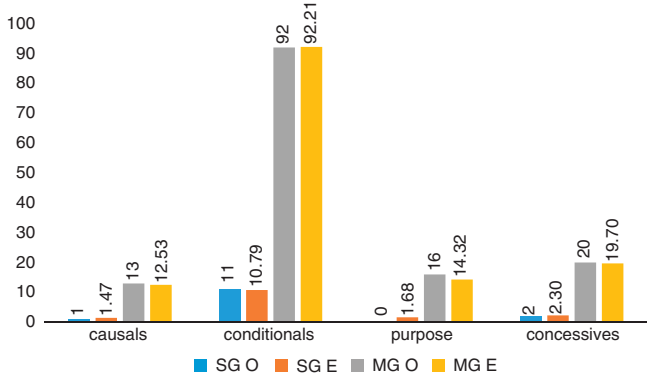

Figure 14 | Female characters' clauses by context in histories.

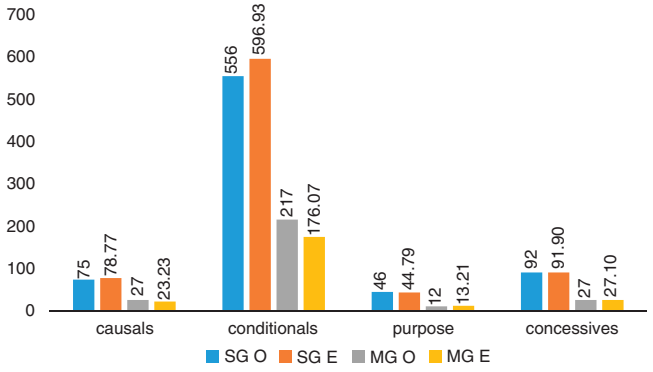

Figure 15 | Male characters' clauses by context in histories.

Discussion

The overall results of this analysis indicate strong similarity in the use of adverbial clauses in the speech of female and male

characters. Thus, the results in our corpus of Shakespeare histories and comedies indicate major differences from the speech in the LLC. While Mondorf (2004) found that in the LLC women used more adverbial clauses overall than did male characters, in the plays analysed here no such difference appeared. A possible explanation is that the differential usage is a relatively recent phenomenon and was not yet operative in Shakespeare's time. One way to investigate this hypothesis would be to analyse written communications of real people, rather than fictional characters, from the time period, for example, letters and diaries. Since the LLC is a corpus of spoken and not written communication, the comparison would be problematic, but it constitutes one opportunity. A more likely explanation for the difference is that Shakespeare did not reproduce this aspect of interaction in his dialogue, since it is not a salient feature in gender construction. Previous analyses suggest some inconsistencies: Pennebaker (2013) analysed features found to be indicative of speaker gender in actual interaction and found that Shakespeare largely failed to reproduce those indications in his dialogue; however, the computer programs used by Hota *et al.* (2006) and Olson (2013) did identify lexical items and classes indicative of gender-linked usage, and some of those features did relate to language aspects indexed by gender according to previous studies. These inconsistencies suggest that some features used to perform gender are more salient than others. The results of the current study suggest that syntactic features in general and/or adverbial clauses in particular may be less salient than lexical features, and playwrights, and perhaps novelists, are comparatively less likely to reproduce the proportions found among actual women and men in their dialogue. This premise could be investigated by analysing plays of other writers, particularly a corpus of British English plays contemporary with the LLC, for purposes of comparison.

The relations of specific clause types and speaker and interlocutor gender also differ in the plays examined here from Mondorf's findings. In the LLC, the women used more causal, conditional and purpose clauses, and the men used more concessive clauses. Moreover, the differences in frequencies of causal, purpose and conditional clauses were heightened in mixed-gender contexts. In the plays we have analysed, differences appear in only two of the clause types: purpose and conditional, and they are constrained by the genres of the plays.

Purpose clauses. The purpose clauses exhibit combined effects of speaker gender, interlocutor gender and play genre. First, the women use purpose clauses more often in mixed-gender than in single-gender speech, and in the histories they use more than the men do. While the small total number of purpose clauses used by the female characters argues for caution in interpretation, close analysis of the purpose clauses female characters produce in mixed-gender context suggests an explanation related to the female roles in the histories. Given that only 12% of the speech in the histories is produced by female characters and 72% of the male characters' speech occurs in all-male contexts, we can argue that mixed-gender interaction is quite marked in this genre. Within these segments, nearly all the purpose clauses the female characters produce in mixed-gender conversation in this genre are addressed to male characters. Moreover, many of them occur when the female character is trying to persuade or influence the male character's choice of action. For example, in *Richard II*, 5, 3 the Duchess of York produces the following clause as she pleads with the king to spare her son's life.

(20) Thine eye begins to speak; set thy tongue there; Or in thy piteous heart plant thou thine ear; **That hearing how our plaints and prayers do pierce, Pity may move thee "pardon" to rehearse**.

In *Henry VI*, 3, 2, Queen Margaret uses three purpose clauses in quick succession as she convinces Suffolk, who is reluctant to leave her, that he must go to France.

(21) O, let me entreat thee cease. Give me thy hand, **That I may dew it with my mournful tears**; Nor let the rain of heaven wet this place, To wash away my woful monuments. O, could this kiss be printed in thy hand, **That thou mightst think upon these by the seal**, Through whom a thousand sighs are breathed for thee! So, get thee gone, **that I may know my grief**;

In a third example, from *Henry IV*, 2, 3, the Earl of Northumberland's idea of going to war is being opposed by his wife and daughter-in-law, Lady Percy. Left a widow when her husband was killed in battle, Lady Percy is particularly heated in her argument.

(22) If they get ground and vantage of the king, Then join you with them, like a rib of steel, To make strength stronger; but, for all our loves, First let them try themselves. So did your son; He was so suffer'd: so came I a widow; And never shall have length of life enoughTo rain upon remembrance with mine eyes, **That it may grow and sprout as high as heaven, For recordation to my noble husband**.

Note that the purpose clause in this case does not directly suggest a reason why the man to whom she is speaking should or should not pursue the course of action in question. Rather, it constructs an alternate, impossible reality, in which she lives long enough to sufficiently mourn her husband that he is suitably commemorated.

The occurrence of the clauses in these and other passages where the female characters are trying to influence the course of events is not always simply explained as their justifying certain courses of action to the male characters who have the power to enact them. However, the clauses do, we argue, largely contribute to the portrayal of female characters in the histories as characters with clear interests and understandings, working to achieve their goals within the constraints set by the societies, some of which relate specifically to their gender. In accordance with these constraints, they typically reference consequences of events beyond the female characters' own constrained actions. Such a localized, goal-directed perspective on the use of this type of adverbial clauses suggests that a more productive approach to analysing the uses of adverbial clauses in the Shakespeare corpus than the rough-grained comparison of gender groups would to focus on instantiations with regard to specific characters and conversations. A more complex characterization of the characters, taking into account features such as social status, would be called for.

A similar point can be made with regard to the comedies, in which the significant difference regarding purpose clauses is that the male characters use them more in single-gender than in mixed-gender interaction. Examining these clauses, we see that in contrast to the female characters' clauses discussed above, these clauses generally reference motivations and potential consequences relevant to the speaker's own actions. In *The Merry Wives of Windsor* 2, 1, for example, Ford explains his determination to search for Falstaff in both the potential and the impossible hiding places in Ford's house.

(23) This 'tis to be married! this 'tis to have linen and buck-baskets! Well, I will proclaim myself what I am: I will now take the lecher; he is at my house; he cannot "scape me; "tis impossible he should; he cannot creep into a halfpenny purse, nor into a pepper-box: but, **lest the devil that guides him should aid him**, I will search impossible places.

Similarly, in *A Midsummer Night's Dream*, 2, 2, Nick Bottom explains his immediate plans.

(24) I see their knavery: this is to make an ass of me; to fright me, if they could. But I will not stir from this place, do what they

can: I will walk up and down here, and I will sing, **that they shall hear I am not afraid**.

A third example occurs in *The Taming of the* Shrew, 1,2, when Hortensio explains his plans to Grumio.

(25) Now shall my friend Petruchio do me grace, And offer me disguised in sober robes To old Baptista as a schoolmaster Well seen in music, to instruct Bianca; **That so I may, by this device, at least Have leave and leisure to make love to her And unsuspected court her by herself**.

A reasonable hypothesis about why they occur more in all-male than in mixed-gender conversation, therefore, might be that the male characters typically discuss and explain their plans and actions with the other male characters rather than with the female characters. Thus, the crucial point is not the performance of gender at the broad level but the effecting of specific activities whereby characters create complex identities of which gender is an aspect and other characteristics such as social class are also important.

Conditionals. The significant finding regarding conditionals is that in the histories male characters use more in mixed-gender than in single-gender speech. In the LLC, the differences in gender-linked usage of the conditionals was somewhat more complicated than in the other kinds of clauses. First, the greater use of the conditionals by female characters than male characters appeared not in the total number of conditionals used, where the difference was not significant, but in the postposed ones, when the conditionals were separated according to their position relative to the main clause. Possibly, an analysis by clause position would give different findings in these data. We leave this hypothesis for a future study. Second, the conditionals in the LLC were the only type where the observed difference in mixed-gender speech was not increased when all-female and all-male speech were compared. The theoretical significance of this result is open to debate. In the present study, the greater use by the male characters in single-gender speech contrasts with their usage in mixed-gender speech, where no difference appeared. Thus, the use of the conditionals might be quite different from that observed in the LLC.

Given the large number of conditional phrases (773 produced by males in histories, 217 of which occur in mixed-gender speech), characterization is somewhat difficult, and a more complete classification waits for a further analysis. For the present analysis, it can be seen that some of the male characters' conditionals do soften the propositions of the main clauses, as generally seen in the LLC. For example, in the marriage proposal from King Henry to the Princess Catherine in *Henry V*, 5, 2, we see a suite of conditionals contributing to the gentle and humble tone.

(26) Marry, **if you would put me to verses or to dance for your sake**, Kate, why you undid me: for the one, I have neither words nor measure, and for the other, I have no strength in measure, yet a reasonable measure in strength. **If I could win a lady at leap-frog, or by vaulting into my saddle with my armour on my back**, under the correction of bragging be it spoken. I should quickly leap into a wife. Or **if I might buffet for my love, or bound my horse for her favours**, I could lay on like a butcher and sit like a jack-an-apes, never off. But, before God, Kate, I cannot look greenly nor gasp out my eloquence, nor I have no cunning in protestation; only downright oaths, which I never use till urged, nor never break for urging. **If thou canst love a fellow of this temper, Kate, whose face is not worth sunburning, that never looks in his glass for love of any thing he sees there**, let thine eye be thy cook. I speak to thee plain soldier: **If thou canst love me for this**, take me: if not, to say to thee that I shall die, is true; but for thy love, by the Lord, no; yet I love thee too. And while thou livest, dear Kate, take a fellow of plain and uncoined constancy; for he perforce must do thee right, because he hath not the gift to woo in other places: for these fellows of infinite tongue, that can rhyme themselves into ladies' favours, they do always reason themselves out again. What! a speaker is but a prater; a rhyme is but a ballad. A good leg will fall; a straight back will stoop; a black beard will turn white; a curled pate will grow bald; a fair face will wither; a full eye will wax hollow: but a good heart, Kate, is the sun and the moon; or, rather, the sun, and not the moon; for it shines bright and never changes, but keeps his course truly. **If thou would have such a one**, take me; and take me, take a soldier; take a soldier, take a king. And what sayest thou then to my love? speak, my fair, and fairly, I pray thee.

This marriage scene is of course well known for its comic effect. Though that effect derives largely from the difficulties each character has with the other's native language, the relatively high concentration of conditionals is also consonant with the comic tone, in that in many other contexts they appear closely associated with colourful characters and comic effect, particularly when they occur in close proximity to each other. An example occurs in *All's Well That Ends Well*, 3, 6, when Bertram goads Parolles into going to get back the regiment's drum.

(27) Why, if you have a stomach, to't, monsieur: if you think your mystery in stratagem can bring this instrument of honour again into his native quarter, be magnanimous in the enterprise and go on; I will grace the attempt for a worthy exploit: if you speed well in it, the duke shall both speak of it. and extend to you what further becomes his greatness, even to the utmost syllable of your worthiness.

Falstaff in particular includes conditional clauses, often in clusters, in his speech in the comedies and also in both parts of *Henry IV*, as in this example from *Henry IV Part I*, 2, 2.

(28) I am accursed to rob in that thief's company: the rascal hath removed my horse, and tied him I know not where. **If I travel but four foot by the squier further afoot**, I shall break my wind. Well, I doubt not but to die a fair death for all this, **if I 'scape hanging for killing that rogue**. I have forsworn his company hourly any time this two and twenty years, and yet I am bewitched with the rogue's company. **If the rascal hath not given me medicines to make me love him**, I'll be hanged; it could not be else: I have drunk medicines. Poins! Hal! a plague upon you both! Bardolph! Peto! I'll starve ere I'll rob a foot further. **An 'twere not as good a deed as drink, to turn true man and to leave these rogues**, I am the veriest varlet that ever chewed with a tooth. Eight yards of uneven ground is threescore and ten miles afoot with me; and the stony-hearted villains know it well enough: a plague upon it when thieves cannot be true one to another!

In this rather long speech, Falstaff incorporates conditionals as one means of performing exaggeration and heightened affect, in company with strong evaluation terms such as *rogue* and *rascal* and dramatic speech acts such as curses and exclamations. Rather than a means of attenuating and qualifying speech, and, therefore, indexing tentativeness ultimately linked to gender, conditionals may more often provide a means for Shakespeare to entertain the audience by constructing amusing and interesting characters who produce this kind of lively and often funny dialogue. Such technique may be more often realized in male roles, and in the histories this kind of scene may more often occur with female characters present, while the scenes that more strongly advance the action may occur more often with only males on stage. Further analysis of the conditional clauses, with attention to the particular characters producing them, might help to clarify this matter.

Conclusions

As pointed out by Craig and Kinney (2009), quantitative data can indicate what qualitative questions should (and should not) be pursued. This study indicates that the use of adverbial clauses in relation to gender in Shakespeare's plays is quite different than that attested in the actual usage of twentieth-century British English speakers. Mondorf's (2004) analysis of the LLC suggests that adverbial clause usage performs gender by indexing the cline of tentativeness and definiteness, so the women use more of the three types of clause that hedge meanings and the male characters use more of the type of clause that strengthen them. In examining this difference in a corpus of Shakespeare plays, we have found that the gender of the speaker and the gender composition of the interlocutor group affect the use of the clauses very little. In line with the previously great variation in adverbial clause and gender among contexts and languages that has been noted in previous studies, the extensive similarity in frequency in the plays we have examined indicates that differences visible in a very large corpus such as the LLC do not play an important role in the construction of gender in Shakespeare's characters.

Small differences do suggest that Shakespeare uses two of the adverbial clause types studied by Mondorf, purpose and conditional, to portray aspects of his stories and characters linked to gender in ways backgrounded in the plays. Because of the contextual gender performance of the characters in the stories he tells, the usage of the clauses is linked not only to the gender of the speaker and the interlocutors but also to the genre of the plays, as specific activities develop the characters and the plots.

While in both histories and comedies speech from male characters clearly predominates, the discrepancy is greater in the histories, and much more of the male characters' speech occurs in single-gender talk, confirming intuitive interpretations of the histories as stories of male characters' doings with marked intervals where the female characters appear. Two context-related differences appear in this genre: the female characters use purpose clauses more in mixed-gender interaction, and the male characters use conditional clauses more in mixed-gender interactions. The purpose clauses the female characters use, examined in their context, can be understood to relate to attempts by the female characters to influence the course of events, by influencing the men to whom they have access, given that the female characters are limited by the societal structure in their access to direct influence. For example, they are not expected to commission a military force and go to battle themselves, but they may very well attempt to persuade men to do so, or not to do so. The men have no parallel need to attempt to influence the decisions women take; therefore, in the histories the female characters use more purpose clauses than the male characters, and across genres the female characters' purpose clauses appear more in mixed-gender than in single-gender interaction.

Concerning conditional clauses, in the LLC this type of clause was somewhat irregular in two different ways: the female characters used more of them than the male characters only when the data were limited to those postposed to the main clause, and the difference between the genders was not intensified in mixed-gender speech. Comparing these findings with the US club meeting context, French spoken corpus, and Spanish experimental study described above, conditional clauses failed to pattern consistently across the studies, suggesting that they fulfill more varied speech functions and are, therefore, subject to more variability in general than the other clause types. In the present study, evidence that they fulfill a similar purpose to that inferred by Mondorf (2004), that is, hedging or softening propositions, does appear in close analysis of male character's mixed-gender speech. However, their greater occurrence in mixed-gender speech in the histories, in which female characters are less prominent characters (producing less speech and participating in fewer conversations) than in the comedies, suggests an additional interpretation: they may also be characteristic of a marked kind of interaction in the histories. They may be used by Shakespeare as display of verbal skill that contributes to the construction of colourful characters with interesting and comic ways of speaking that add diversion, background and interest to the histories. While action might be advanced more by scenes where the male characters scheme, act and report, scenes where female characters appear might be more likely sites for this kind of development.

In general, the comparative lack of differences in adverbial clause usage relative to the LLC suggests that adverbial clauses in particular and perhaps syntactic factors in general are less salient and probably less important ways of performing gender than lexical items. However, a writer of Shakespeare's skill is also able to exploit certain types of clauses for reasons grounded directly and/or indirectly in the purposes of the genres of plays he writes. The use of adverbial clauses may contribute to certain character identities, events, motivations and so on that contribute to the construction of a genre. The lack of attention to syntax in gender studies so far appears to be justified. A more interesting and productive line of research than the search for syntactic differences between the speech of male and female characters in Shakespeare will be the investigation of the use of features such as adverbial clauses in relation to specific goals and contexts, for example, the discursive construction of specific characters or the performance of specific speech events.

Limitations and future research

An important limitation of this research is that we have not engaged with the distinction between "sex" and "gender," but have simply taken characters to instantiate the genders most commonly associated with their sex. At least one of the problems this has caused is some coarseness in the distinction between single-gender and mixed-gender interaction. For example, in one scene classified as mixed-gender, the only male characters present are little boys, who certainly represent and perform maleness in a different way than the adult male characters. For a valuable discussion of how Shakespeare's language relates to more complex views of gender, see Maillet (1999). However, much work remains to be done in distinguishing sex from gender in Shakespeare and other literature.[3] Similarly, sex and social status clearly interact in important ways in these plays, and an analysis accounting for this interaction is likely to yield a more developed view of adverbial clauses and other gender-linked features.

Another limitation concerns the description of the clauses. In addition to analysing each clause type with regard to its position relative to the main clause, Mondorf (2004) also classified the clauses more finely with regard to meaning, following a taxonomy of propositional, conclusive, and speech act meaning. Obtaining a larger sample, for statistical validity and analysing clause use based on this taxonomy, is a useful direction for future research.

Notes

1 We acknowledge that the division of Shakespeare's plays into genres is problematic (Danson (2000), among others), and we adopt it as a matter of convenience on the premise that the divisions are nevertheless meaningful.

2 What Mondorf refers to as clauses starting with subordinating conjunctions are analyzed in grammar descriptions such as that of Pullum and Huddleston (2002) as prepositions followed by finite clause complements. This difference is of no import to the current discussion.

3 As an anonymous reviewer pointed out, the distinction between sex and gender in the plays is further complicated by the issues of male actors acting female roles in early productions and characters who disguise themselves as characters of a different gender. Ultimately, questions of gender construction in Shakespeare will need to account for this kind of multiple layering.

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Data availability

All data analysed in the current study is included in the article.

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